$\Rightarrow 0 < 1-\sqrt{u_n} < 1$

$\Rightarrow 0 < (1-\sqrt{u_n})^2 < 1$

$\Rightarrow 0 < u_n(1-\sqrt{u_n})^2 < u_n < 1$

$\Rightarrow 0 < u_{n+1} < 1$

Conclusion: $\forall n \in \mathbb{N};\ 0 < u_n < 1$

b) $\forall n \in \mathbb{N};\ u_{n+1} - u_n = u_n(1-\sqrt{u_n})^2 - u_n$

$= u_n\left((1-\sqrt{u_n})^2 - 1\right)$

$= u_n\left(1 - 2\sqrt{u_n} + u_n - 1\right)$

$= u_n\left(u_n - 2\sqrt{u_n}\right) < 0$

($u_n > 0$, $u_n - 2\sqrt{u_n} \leq 0$)

car $0 < u_n < 1 \Rightarrow \sqrt{u_n} > u_n \Rightarrow 2\sqrt{u_n} > u_n$

$\Rightarrow u_n - 2\sqrt{u_n} < 0$

Ainsi (u_n) est décroissante.